Translation of JP-A-62-1134

SPECIFICATION

1. TITLE OF THE UTILITY MODEL

Electronic thermometer

2. CLAIMS OF THE UTILITY MODEL

An electronic thermometer having a heat-insulating material disposed between a temperature sensor and the main body of the thermometer.

3. DETAILED DESCRIPTION OF THE UTILITY MODEL

[INDUSTRIAL FIELD OF APPLICATION]

The present utility model relates to an electronic thermometer.

[ABSTRACT OF THE UTILITY MODEL]

The present utility model has improved the heat responsive property by disposing a heat-insulating material between a thermometer main body and a temperature sensor.

[PRIOR ART]

Conventionally, in an electronic thermometer such as electronic clinical thermometer, a temperature sensor 1 such as a thermistor was surrounded by a metallic cap 2 for protection. And, in order to further protect the temperature sensor 1, an adhesive 3 was filled in the cap 2, which was fixed to a housing 4a of a thermometer main body 4. Meanwhile, the temperature sensor 1 had been connected to an electric circuit in the main

body 4 via a lead wire 5 in advance.

[PROBLEMS THAT THE INVENTION IS TO SOLVE]

However, in an electronic thermometer of such a structure, since the heat capacity of the adhesive 3 is larger than that of the temperature sensor 1 such as a thermistor in the heat-sensitive part, i.e., in the cap 2, the conduction efficiency of heat from outside to the temperature sensor 1 deteriorates to cause the heat responsive property of the temperature sensor 1 to deteriorate. Thus, such a thermometer has a problem of difficulty in quick and accurate temperature measurement.

Moreover, there is another problem in the above-described electronic thermometer. Namely, heat discharge from the adhesive 3 exists, and as is indicated by the arrow in the drawing, the heat conducted from outside to the temperature sensor 1 via the cap 2 diverges by the air current in the housing 4a of the main body 4. These phenomena act to deteriorate the heat responsive property.

The present utility model has an object of providing an electronic thermometer capable of improving heat responsive property by considering the above-cited problems.

[MEANS TO SOLVE THE PROBLEMS]

To solve the above-cited problems, the present utility model is characterized by enhancing heat responsive property by disposing a heat-insulating material between a temperature

sensor and the main body of the thermometer.

[Example]

One example of the present utility model is explained with reference to the drawings below. Fig. 1 is a cross section of the heat-sensitive part of an electronic thermometer associated with one example of the present utility model, and Fig. 2 shows the outward appearance of the heat-insulating material 10 shown in Fig. 1.

For the heat-insulating material 10, one can adopt a well known material such as a foamed synthetic resin, cork and the like. The shape of the material is one resulting from combining two, substantially cylindrically shaped bodies with different diameters as shown in Fig. 2 wherein the intermediate portion 10c is fabricated in a tapered form. Further, in the side plane for the axial direction of the heat-insulating material 10, a groove 10e, which leads to a hollow portion 10d, is provided.

Now, back to Fig. 1, a main body housing 11 and a highly heat-conductive cap 12 made of aluminum or the like are in such forms as to be fitting mutually. In addition, the cap 12 has a roughly circular cross section. Numeral 13 indicates a temperature sensor such as a thermistor, numeral 14 indicates a lead wire used to connect the temperature sensor 13 to an electric circuit, which is not shown in the drawing, in the main body housing 11, numeral 15 indicates an adhesive for the protection of the temperature sensor 13 and for the enhancement

of the heat conductivity between the temperature sensor 13 and the cap 12.

The production procedure of the above-described heat-sensitive part is as follows. First of all, the lead wire 14 of the temperature sensor 13 is connected to the electric circuit in the main body. Then, after the lead wire 14 is arranged in the hollow portion 10d via the groove 10e of the heat-insulating material 10, the temperature sensor 13 is disposed in the cap 12 filled with the adhesive 15, and further the cap 12 is fitted into the main body housing 11. The adhesive 15 flows not only into the hollow portion 10e and the groove 10e of the heat-insulating material 10 but also into the main body housing 11 and then solidifies. During this procedure step, the heat-insulating material 10 moves towards the main body housing 11 by the flow of the adhesive 15 until the intermediate portion 10c comes in contact with the main body housing 11, and is fixed there by the solidification of the adhesive 15.

By way of precaution, the heat-insulating material 10, which was in the form of cylinder in order to be sealed in the cap 12 having a roughly circular cross section, can assume an appropriate form depending on the configuration of the cap. In addition, as the heat-insulating material, plastic ones such as asbestos may be adopted.

[Effect OF THE UTILITY MODEL]

As has been described heretofore, since the present utility model uses a heat-insulating material disposed between the temperature sensor and the main body, it can perform precise temperature measurement in a short time owing to the improved heat responsive property of the temperature sensor.

4. BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a diagram showing the cross-section of the heat-sensitive part of an electronic thermometer associated with one embodiment of the present utility model. Fig. 2 is a diagram showing the outward appearance of the heat-insulating material shown in Fig. 1, and Fig. 3 is a diagram showing a partially fractured front view of a conventional example.

10: HEAT-INSULATING MATERIAL

11: MAIN BODY HOUSING

12: CAP

13: TEMPERATURE SENSOR

Fig. 1

第 1 図

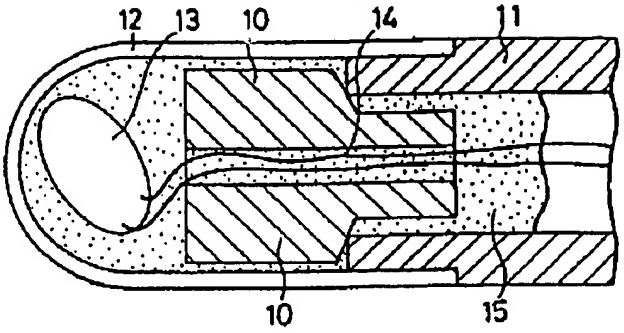


Fig. 2

第 2 図

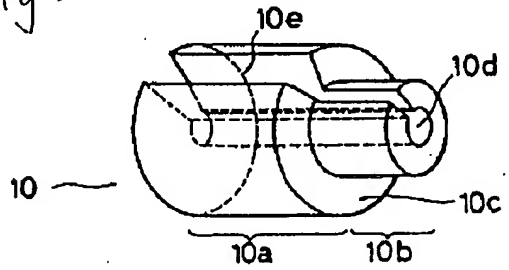
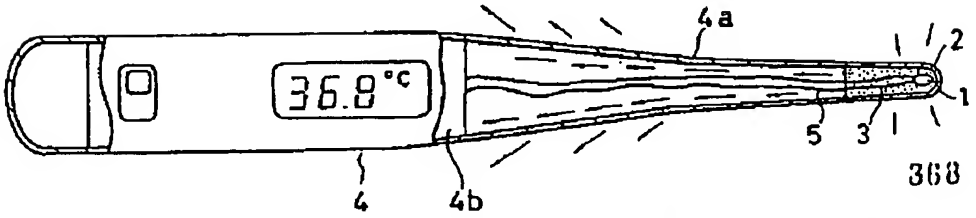


Fig. 3

第 3 図



368